REMARKS

This amendment is filed in response to the Office Action dated August 16, 2004. Claims 1-23 are pending. In the Office Action of August 16, 2004, the Examiner rejected claims 1-6, 14-19, 22 and 23 under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,704,287 to Moharram; the Examiner rejected claims 7-10 and 20-21 under 35 U.S.C. § 103(a) as being unpatentable over Moharram in view of U.S. Patent No. 5,563,875 to Hefel et al. ("Hefel"); the Examiner rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Moharram in view of U.S. Patent No. 6,466,548 to Fitzgerald; and the Examiner rejected claims 12-13 under 35 U.S.C. § 103(a) as being unpatentable over Moharram in view of Fitzgerald and further in view of Hefel.

By this amendment, claims 1, 3, 10, and 16 are amended to more particularly and distinctly claim the invention and correct certain informalities. Support for the amended claims is found throughout the specification and drawings, and in particular, in the Specification at page 2. The Examiner's rejections are addressed below in light of the amended claims.

Summary of the Invention

The present invention relates to hybrid telecommunications networks, and in particular, to a method of loop back testing hybrid networks that include at least one protocol conversion. In accordance with one aspect of the present invention, a method is provided for loop back testing in a hybrid network. A hybrid network includes circuit-switched and packet-based network elements that are coupled together by communications links. The network elements may operate on different communications protocols. A loop back test message traverses a path across network elements to test the integrity and quality of the path. Each

network element that receives the loop back test message modifies the message in a predetermined manner. The originator of the message verifies that the message was modified in an appropriate manner and in an appropriate time frame to determine integrity and quality. More specifically, each network element modifies the loop back message to include a protocol attribute that uniquely identifies the protocol conversion, if any, performed by the network element. The originator of the message checks the protocol attribute for an expected protocol attribute.

In accordance with one aspect of the above-described method, each network element that converts from a first network protocol to a second network protocol, generates two messages in response to receiving the loop back test message. The first message conforms to the first protocol in which the message was received. The second message is converted from the first protocol to the second protocol and then back to the first protocol. The first message and second message are sent to the originator of the loop back message for verification of path integrity, delay and, more importantly, protocol conversion.

In accordance with another aspect of the present invention, a loop back testing enabled network is provided. This network includes a testing enabled network that is coupled to a plurality of network elements coupled to each other via a plurality of communication links. At least some of the plurality of network elements convert one network protocol to another network protocol. The testing enabled network element executes the methods described above for initiating and verifying the loop back test message.

Claims 1-23 Are Patentable

The Examiner rejected claims 1-6, 14-19, 22 and 23 under 35 U.S.C. § 102(e) as anticipated by Moharram; the Examiner rejected

claims 7-10 and 20-21under 35 U.S.C. § 103(a) as being unpatentable over Moharram in view of Hefel; the Examiner rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Moharram in view of Fitzgerald; and the Examiner rejected claims 12-13 under 35 U.S.C. § 103(a) as being unpatentable over Moharram in view of Fitzgerald and further in view of Hefel. In each of these rejections the Examiner relies on Moharram as the base reference. The Applicants respectfully traverse the rejections on the basis that claims 1-23, as amended, include certain novel limitations that are not disclosed by Moharram, in particular, or the other prior art. Namely, Moharram and the other art fail to disclose each network element adding a protocol attribute to the loop back test message, where the protocol attribute represents a protocol conversion.

In all the claim rejections, the Examiner relies upon Moharram as disclosing the addition of a protocol attribute, as claimed in the present invention. However, a close inspection of Moharram reveals that Moharram does not make such an explicit disclosure.

Moharram is directed to a method and apparatus for providing enhanced telecommunications services troubleshooting in hybrid networks. Moharram discloses a loop back test message that includes a Traveling Log that is relayed with the message. The Traveling Log receives various entries from each network element according to "a selector indicator," which identifies the data to be collected. *See* Moharram, col. 8, lines 16-18. In general, the Traveling Log provides data related to the health of each network element. *Id.*, at col. 3, line 66 - col. 4, line 2. The Traveling Log does appear to be a repository where a "protocol attribute" in accordance with the present invention might be stored, but Moharram does not disclose this as a specific use of the Traveling Log. Such an explicit disclosure is required for the Examiner's rejections. Moharram speaks of the "information" that is placed in the

Traveling Log only in general terms (*See, e.g.,* Moharram, col. 4, lines 11-12; col. 4, lines 45-53; col. 6, lines 45-47; and col. 6, lines 51-52), and does not specifically mention the Traveling Log storing a protocol attribute that represents a protocol conversion.

In contrast, each of the claims, as amended, requires a protocol attribute that represents a protocol conversion. Since Moharram and the other prior art lacks this important element, all the claims are patentable.

In addition, claims 11-13 are patentable for the additional, and alternative reason that these claims include other novel limitations not disclosed in the prior art. In particular, claims 11-13 require a network element that "converts from a first network protocol to a second network protocol" to send both a "first message ... and a second message" in response to receiving the one loop back test message. The first message "corresponds to the first network protocol and is not converted to the second network protocol" and the second message "corresponds to the first network protocol and is converted to the second network protocol and then back to the first network protocol." The network element initiating the loop back message is advantageously able to compare the first and second message to evaluate at least protocol conversion.

The Examiner cites to Fitzgerald as having analogous capability. However, Fitzgerald does not even require two messages in response to the one loop back test message. Fitzgerald, as cited by the Examiner, actually requires multiple iterations of the loop back test message with different destinations to make some protocol conversion analysis. This is very different from the procedure specified in claims 11-13. Therefore, claims 11-13 are patentable for at least this additional reason.

Consideration of EP 0 777 401 is Requested

Applicants provided the Office with an Information Disclosure Statement (IDS) on November 20, 2002. That IDS included, among other things, European Patent Application No. EP 0 777 401 A1. The PTO-1449 sent by Applicants with the IDS and returned to the Applicants with the Office Action of August 16, 2004, does not indicate that the Examiner considered this reference. That is, the PTO-1449 is not initialed by the Examiner at the entry for this reference. Applicants respectfully request that EP 0 777 041 A1 be considered, if it has not already, and that the reference be initialed on the PTO-1449.

CONCLUSION

All pending claims are in condition for allowance. Allowance at an early date is solicited.

Respectfully submitted,

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Date: November 16, 2004

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